THREAD SPOOL AND BOBBIN HOLDER

TECHNICAL FIELD

The present invention relates generally to an apparatus and method for storing a spool of thread together with a bobbin wound with the same color thread.

BACKGROUND OF THE INVENTION

Although various devices and methods for holding and storing spools and bobbins are known, all are disadvantageous when compared to the present invention. For instance, some devices contain the bobbin within a cavity in the spool, which prevents observation of the bobbin thread color and requires modification of the spool. Other devices require protuberances to be formed onto the spool itself in order to hold the bobbin thereon. Inclusion of these modifications increases manufacturing costs and the resulting devices have limited versatility. Since spools of thread are in the nature of commodities and costs must be controlled, the inclusion of additional and/or costly features thereon can be disadvantageous.

While the known devices may be utilized for storing spools of thread with their associated bobbins, they have limited function and appeal for their intended use. Therefore, it is readily apparent that there is a need for a spool/bobbin apparatus and method that overcomes the aforementioned disadvantages by providing secure containment of the bobbin and the spool with their thread colors still visible.

BRIEF SUMMARY OF THE INVENTION

The present invention began out of a need for a device to keep bobbins together with the spool of thread wherefrom the bobbins were wound, whereby the thread color on both the spool and the bobbin remain visible to the user.

The present invention, in a preferred embodiment, overcomes the afore-mentioned disadvantages and meets the recognized need for a device by keeping the bobbin together with the spool of thread from which the bobbin was wound,

whereby the thread color on both the spool and bobbin remain visible to the user.

According to its major aspects and broadly stated, the present invention in its preferred embodiment is a holder having a first section for retaining a spool of thread and a second section for retaining the associated bobbin.

More specifically, the present invention in its preferred embodiment is a formed plastic containment device with a first section which inserts into and holds a spool of thread thereon and a second section which receives and holds a bobbin inserted therein.

A feature and advantage of the present invention is that the thread color remains visible on both the spool and its associated bobbin.

A feature and advantage of the present invention is that it keeps a spool and its associated bobbin securely together.

A feature and advantage of the present invention is its ease of use.

A further feature and advantage of the present invention is its ease of manufacture and low cost of production.

A further feature and advantage of the present invention is its convenient size.

A feature and advantage of the present invention is its separate retainers for the spool and bobbin.

An additional feature and advantage of the present invention is its suitability for being molded as a unit.

A feature and advantage of the present invention is that it may be formed in separate parts and subsequently assembled.

Another feature and advantage of the present invention is that it prevents thread from unwinding from the spool and/or bobbin when each is retained by the present device.

An additional feature and advantage of the present invention is its ability to utilize the formed shape of the

edges of a traditional thread spool to assist in retention of the spool within the confines of the present invention.

These and other features and advantages of the present invention will become more apparent to one skilled in the art from the following description and claims when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Having thus described the invention in general terms, the present invention will be better understood by reading the Detailed Description of the Preferred and Selected Alternate Embodiments with reference to the accompanying drawing figures, which are not necessarily drawn to scale, and in which like reference numerals denote similar structures and refer to like elements throughout, and in which:

FIG. 1A is a plan view of a device according to a preferred embodiment of the present invention;

FIG. 1B is depicts the device of **FIG. 1A** in use, inserted within a spool.

FIG. 2 is a perspective view of a device according to a preferred embodiment of the present invention;

FIG. 3 is a perspective view of a device according to an alternate embodiment of the present invention;

FIG. 4 depicts a plan view of a device according to an alternate embodiment of the present invention;

FIG. 5A is a perspective view of a device according to an alternate embodiment of the present invention;

FIG. 5B is a perspective view of a device according to an alternate embodiment of the present invention;

FIG. 6A is a plan view of a device according to an alternate embodiment of the present invention;

FIG. 6B is a plan view of a device according to the alternate embodiment depicted in **FIG. 6A**, shown in use; and

FIG. 7 depicts a plan view of a device according to an alternate embodiment of the present invention.

FIG. 8 depicts a plan view of a device according to an alternate embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED AND ALTERNATIVE EMBODIMENTS

In describing the preferred and selected alternate embodiments of the present invention, as illustrated in the Figures, specific terminology is employed for the sake of clarity. The invention, however, is not intended to be limited to the specific terminology so selected, and it is to be understood that each specific element includes all technical equivalents that operate in a similar manner to accomplish similar functions.

Referring now to **FIGS. 1A, 1B** and **2**, apparatus **10** is a combination thread spool and bobbin holder preferably having spool retention section **20** carried on bobbin retention section **30**. Spool retention section **20** is preferably formed as a generally bow-legged wedge device preferably having first leg

26, second leg **28**, base **32**, support **33** and tip **34**. First end **36** of first leg **26** and first end **38** of second leg **28** are preferably carried by base **32** of spool retention section **20**, preferably proximate to rear **295** of bobbin retention section **30**. Support **33** is preferably cylindrical in form, but it will be recognized by those in the art that other shapes can easily substituted without changing the functionality. Support **33** preferably provides a rest against which spool **S** can reside when pushed fully onto spool retention section **20**. By placing the end of thread **T** between spool **S** and support **33**, thread **T** is preferably held firmly, preventing unravelling of spool **S**.

First leg **26** and second leg **28** preferably join together at second ends **42** and **44**, respectively, to form tip **34**. The shape of spool retention section **20** is preferably such as to facilitate its insertion into spool **S**.

For insertion of spool retention section **20** into spool **S**, tip **34** is preferably positioned in contact with hole **H** of spool **S**. Pressure applied to apparatus **10** in longitudinal alignment with hole **H** of spool **S** preferably causes spool retention section **20** to firmly enter hole **H**. Midpoint **23** of first leg **26** and midpoint **25** of second leg **28** are preferably

spaced apart a distance greater than the diameter of hole **H**, which distance is also greater than the distance between first ends **36** and **38** at base **32** and second ends **42** and **44** at tip **34**. First leg **26** and second leg **28** are preferably made of a material and in a shape that permits resilient compression of first leg **26** and second leg **28** toward each other when entering hole **H**, preferably causing first leg **26** and second leg **28** to subsequently recoil against the sides of hole **H** of spool **S** with sufficient force to hold spool **S** securely, preferably with spool retention section **20** inserted full length, and preferably causing base **32** to contact spool **S**. Contact between base **32** and spool **S** will preferably hold loose thread end **T** if wound several turns round the juncture of leg ends **36** and **38** proximate to base **32**.

Bobbin retention section **30** is preferably formed as 'U'-shaped device **200** preferably having first side **210** and second side **220**. First side **210** preferably has first lip **230** preferably located at first end **250**. Second side **220** preferably has second lip **240** preferably located at second end **260**. First bend **290** is preferably formed in first side **210** preferably proximal to first end **250**. Second bend **300** is preferably formed in second side **220** preferably proximal to

second end **260**. First side **210** preferably has first edge **310a** and second edge **320a** located thereon. Second side **220** preferably has located thereon first edge **310b** and second edge **320b**. Preferably defined along first edge **310a** of first side **210** of bobbin retention section **30** is first ridge **270a**. Preferably defined along second edge **320a** of first side **210** of bobbin retention section **30** is second ridge **280a**. Preferably defined along first edge **310b** of second side **220** of bobbin retention section **30** is third ridge **270b**. Preferably defined along second edge **320b** of second side **220** of bobbin retention section **30** is fourth ridge **280b**.

For insertion of bobbin **B** into bobbin retention section **30**, bobbin **B** is preferably positioned in simultaneous contact with first lip **230** at first bend **290** and second lip **240** at second bend **300**, preferably in between ridges **270a** and **280a** of first side **210** and ridges **270b** and **280b** of second side **220**, and is pressed toward interior **35** of bobbin retention section **30**. Pressure on bobbin **B** toward interior **35** preferably causes resilient opening of first side **210** and second side **220** relative to each other. The resilient opening of first side **210** relative to second side **220** preferably facilitates the insertion of bobbin **B** into interior **35** of bobbin retention

section **30**, wherein bobbin **B** is preferably positioned proximate rear **295** of bobbin retention section **30**. Movement of bobbin **B** past first bend **290** and second bend **300** into interior **35** preferably causes first side **210** and second side **220** to recoil toward their at-rest position with sufficient force to securely hold bobbin **B** within interior **35**.

Ridges **270a**, **270b**, **280a**, and **280b** of bobbin retention section **30** preferably confine bobbin **B** laterally and preferably assist to secure bobbin **B** within bobbin retention section **30**.

Bobbin retention section **30** and spool retention section **20** are preferably fixably joined, such as, for exemplary purposes only, having been molded as one piece or assembled with adhesive from their separate sections. Apparatus **10** is preferably formed by injection molding, but it should be recognized by one skilled in the art that other suitable processes might be utilized.

Apparatus **10** is preferably made from a resilient plastic material that is transparent or translucent so that visual identification of the color of the thread on bobbin **B** and

spool **S** is possible from any angle of view. Alternatively, apparatus **10** may be opaque. However, one skilled in the art would readily understand that any appropriate material could be utilized, such as, for exemplary purposes only, nylon, rubber, wood, and/or metal.

Referring now to **FIGS. 3 and 4**, in an alternate embodiment, apparatus **400** replaces spool retention section **20** with spool retention section **40**. This alternate embodiment is a combination thread spool and bobbin holder having spool retention section **40** fixably attached to bobbin retention section **30**, proximate rear **295** of bobbin retention section **30**. Spool retention section **40** is formed as generally 'U'-shaped device **50** having first side **60** and second side **70**. First side **60** has first lip **80** located at first end **100**. Second side **70** has second lip **90** located at second end **110** of spool retention section **40**. First bend **120** is formed in first side **60** proximal to first end **100**. Second bend **130** is formed in second side **70** proximal to second end **110**. First side **60** and second side **70** have common first edge 140 and common second edge **150**. The dimension between first edge **140** and second edge **150** is preferably less than the length of spool **S** to be received within spool retention section **40**.

For insertion of spool **S** into spool retention section **40**, spool **S** is positioned in simultaneous contact with first lip **80** at first bend **120** and with second lip **90** at second bend **130**. Pressure applied to spool **S** toward interior **45** of spool retention section **40** causes resilient opening of first side **60** and second side **70** relative to each other. The resilient opening of first side **60** relative to second side **70** facilitates the insertion of spool **S** into interior **45** of spool retention section **40**, such that spool **S** is positioned proximate rear **125** of spool retention section **40**. Movement of spool **S** past first bend **120** and second bend **130** into interior **45** causes first side **60** and second side **70** to recoil toward their at-rest position with sufficient force to securely hold spool **S** within interior **45**.

When spool **S** is positioned within spool retention section **40**, spool edges **E'** and **E"** remain outside first edge **140** and second edge **150** of spool retention section **40**. The diameter of spool edges **E'** and **E"** is greater than the diameter defined by first edge **140** and second edge **150**, thereby inhibiting lateral movement of spool **S** and assisting in the containment of spool **S** within spool retention section **40**.

Bobbin retention section **30** is formed as 'U'-shaped device **200** having first side **210** and second side **220**. First side **210** has first lip **230** located at first end **250**. Second side **220** has second lip **240** located at second end **260**. First bend **290** is formed in first side **210** proximate first end **250**. Second bend **300** is formed in second side **220** proximate second end **260**. First side **210** has first edge **310a** and second edge **320a** located thereon. Second side **220** has located thereon first edge **310b** and second edge **320b**. Defined along first edge **310a** of first side **210** of bobbin retention section **30** is first ridge **270a**. Defined along second edge **320a** of first side **210** of bobbin retention section **30** is second ridge **280a**. Defined along first edge **310b** of second side **220** of bobbin retention section **30** is third ridge **270b**. Defined along second edge **320b** of second side **220** of bobbin retention section **30** is fourth ridge **280b**.

For insertion of bobbin **B** into bobbin retention section **30**, bobbin **B** is positioned in simultaneous contact with first lip **230** at first bend **290** and second lip **240** at second bend **300**, in between ridges **270**a and **280**a of first side **210** and ridges **270**b and **280**b of second side **220**, and is pressed toward

interior **35** of bobbin retention section **30**. Pressure on bobbin **B** toward interior **35** causes resilient opening of first side **210** and second side **220** relative to each other. Resilient opening of first side **210** relative to second side **220** facilitates the insertion of bobbin **B** into interior **35** of bobbin retention section **30**, wherein bobbin **B** is positioned proximate rear **295** of bobbin retention section **30**. Movement of bobbin **B** past first bend **290** and second bend **300** into interior **35** causes first side **210** and second side **220** to recoil toward their at-rest position with sufficient force to securely hold bobbin **B** within interior **35**. Ridges **270a**, **270b**, **280a**, and **280b** of bobbin retention section **30** confine bobbin **B** laterally and assist to secure bobbin **B** within bobbin retention section **30**.

Bobbin retention section **30** is ninety degrees relative to the plane of spool retention section **40** so that first side **210** and second side **220** of bobbin retention section **30** are positioned ninety degrees relative to the plane in which first side **60** and second side **70** of spool retention section **40** are located.

Bobbin retention section **30** and spool retention section **40** are rigidly joined, such as, for exemplary purposes only, having been molded as one piece or their separate sections assembled with adhesive or rivet at the general midpoint of their respective 'U'-shapes proximate to rear **125** of spool retention section **40** and rear **295** of bobbin retention section **30**. Apparatus **10** is formed by injection molding, but it should be recognized by one skilled in the art that other suitable processes might be utilized.

It is further contemplated in an alternate embodiment that spool retention section **40** and bobbin retention section **30** may lie in a common plane such that first side **60** and second side **70** of spool retention section **40** lie in the same plane as first side **210** and second side **220** of bobbin retention section **30**.

Apparatus **10** is made from a resilient plastic material that is transparent or translucent so that visual identification of the color of the thread on bobbin **B** and spool **S** is possible from any angle of view. Alternatively, apparatus **10** may be opaque. However, one skilled in the art would readily understand that any appropriate material could

be utilized, such as, for exemplary purposes only, nylon, rubber, wood and/or metal.

It is contemplated that a plural number of apparatus **400** units could be grouped into device **500** as shown in **FIG. 5A**, wherein a plurality of apparatus **400** units are strung upon rod **R**, utilizing the center hole in each spool **S**. Alternatively, a plurality of individual apparatus **400** units could be strung upon rod **R** utilizing the center hole of each bobbin **B**.

Another embodiment shown in **FIG. 5B** is device **600**, a series of individual apparatus **400** units, wherein the several apparatus **400** units are attached at the sides of spool retention sections at **610**, forming a new composite device having multiple spool retention sections **40** and multiple of bobbin retention sections **30**.

An additional embodiment is depicted in **FIGS. 6A** and **6B**. Device **700** comprises bobbin retention section **30** as set forth in detail above. Spool retention section **20** of the preferred embodiment is replaced by spool retention section **54**, wherein spool retention section **54** defines a coil having first end **56**, second end **58** and body **62**. Spool retention section **54** is

fixably attached to bobbin retention section **30** at joint **52**, where first end **56** is proximate rear **295** of bobbin retention section **30**.

Body **62** of coil **54** has a natural tendency to remain compactly wound closed prior to use, as shown in **FIG. 6A**. Coil **54** may be opened by forcibly unwinding coil **54**, permitting placement of coil **54** around spool **S**. The tendency of coil **54** to rewind compactly closed causes a firm hold on spool **S** within body **62**, as shown in **FIG. 6B**.

In another alternate embodiment, spool retention section **20** could be a solid rod of a graduated diameter suitable to afford a frictional fit within hole **H** of spool **S**.

Shown alternatively in **FIG. 7**, device **800** replaces spool retention section **20** of the preferred embodiment with prong section **810** of graduated width, with its widest portion adjacent to base **33** on which it is carried and which is proximate rear **295** of bobbin retention section **30**. Prong section **810** is slightly wider than the diameter of hole **H** in spool **S**. When inserted in spool **S**, prong section **810** frictionally retains spool **S** thereon.

Shown alternately in **FIG. 8**, in device **1000**, spool retention section **20** of the preferred embodiment is replaced with multi-disc section **1010** carried by base **33** which is proximate rear **295** of bobbin retention section **30**. Discs **1020** are carried by rod **910**, wherein discs **1020** extend from first end **1030** of rod **910** to second end **1040** of rod **910**, and wherein disc of largest diameter is located proximate first end **1030** and disc of smallest diameter is located proximate second end **1040**, and wherein discs comprise a set each having a decreasing diameter. When inserted into spool **S**, discs **1020** deform sufficiently to frictionally retain spool **S** thereon.

The foregoing description and drawings comprise illustrative preferred and alternate embodiments of the present invention. Having thus described exemplary embodiments of the present invention, it should be noted by those skilled in the art that the within disclosures are exemplary only, and that various other alternatives, adaptations, and modifications may be made within the scope of the present invention. Merely listing the steps of the method in a certain order does not necessarily constitute any

limitation on the order of the steps of the method. Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation. Accordingly, the present invention is not limited to the specific embodiments illustrated herein, but is limited only by the following claims.